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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,921	10/11/2005	Hiroshi Nakamoto	28951-5405	6926
27890 7590 08/07/2007 STEPTOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036			EXAMINER CARTER, WILLIAM JOSEPH	
			ART UNIT 2875	PAPER NUMBER
			MAIL DATE 08/07/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/552,921

Applicant(s)

NAKAMOTO ET AL.

Examiner

William J. Carter

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 15 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 10-12 is objected to because of the following informalities:

In claim 10, line 3, "the panel surface" lacks antecedent basis.

In claims 11 and 12, line 2, "the transmitted or diffused light" lacks antecedent basis.

Claims 10-12 are all presented as "Currently Amended," but the examiner cannot find a record of the claims being previously presented.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6, 8, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsiung et al. (6,876,313) in view of Levine et al. (5,697,689).

With respect to claim 1, Hsiung teaches an illumination apparatus for an operating section (Fig. 1), comprising an operation part (21) provided on a panel (11) of an electronic equipment (10) and an operation knob (24) attached to the operation part (Fig. 2) so that light from a built-in light emission source (22) illuminated a rear surface of the operation knob (Fig. 2), a concave portion (111) opposite an opening in the

Art Unit: 2875

operation knob (Fig. 2) of the panel, a light guiding piece (23) located in the concave portion (Fig. 2) to diffusively transmit the light from the light emission source to illuminate the rear surface of the operation knob (Fig. 2), the light guiding piece comprising a light receiving surface (bottom of 23) that receives the light from the light emission source (Fig. 2) and an emission surface (top of 23) that irradiates a front of the light guiding piece with the light (Fig. 2), wherein the light emission source is provided above a bearing section (receiving hole in 11) of an operation knob (24), so as to pierce a hole in the light guiding piece toward the operation knob (Fig. 2). Hsiung does not explicitly teach a first reflection surface and a second reflection surface that reflect the light outward from the light receiving surface. Levine, also drawn to illumination apparatuses, teaches a first reflection surface and a second reflection surface that reflect the light outward from the light receiving surface (column 12, lines 1-14). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use the reflection surfaces of Levine in the illumination apparatus of Hsiung, in order to direct the light out of the apparatus (column 12, lines 1-14).

As for claim 2, Hsiung further teaches at least one of a shaft section (211) of the operation part (21) and a bearing section (231) of the operation knob (24) fitted around the shaft section (Fig. 2) is a transparent material (column 2, lines 26-27).

As for claim 6, Hsiung further teaches the light receiving surface (bottom of 23) of the light guiding piece (23) for receiving the light from the light emission surface faces an interior of the operation knob (the underside of part 242 is an interior part of item 24), and the emission surface (top of 23) for emitting the light diffusively passing through the

Art Unit: 2875

light guiding piece to the front of the light guiding piece is located around an outer peripheral section of the operation knob (Fig. 1).

As for claim 8, Hsiung further teaches an outer peripheral section of a front surface of the light guiding piece (23) is an emission surface (Fig. 1). Hsiung does not explicitly teach at least part of a rear surface of the light guiding piece is a reflection surface. Levine teaches at least part of a rear surface of a light guiding piece (135) is a reflection surface (column 12, lines 1-14). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use the reflection surfaces of Levine in the illumination apparatus of Hsiung, in order to direct the light out of the apparatus (column 12, lines 1-14). It would have been an obvious to one of ordinary skill in the art, at the time of the invention, to make the emission surface of Hsiung since it is known in the art that a matted surface will transmit light better because it doesn't reflect it (<http://wordnet.princeton.edu/perl/webwn?s=matted>).

As for claim 11, Hsuing and Levine do not explicitly a through-hole is formed in the operation knob so that the transmitted or diffused light is emitted through the through-hole. Hsuing does teach indented notches (243) formed in the operation knob (24) so that transmitted or diffused light is emitted through the indented notches (Fig. 1). Hsiung also teaches through-holes (113). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use the through-holes (113) in place of the indented notches (243), in order to emit light through the through-holes (column 2, lines 16-19).

As for claim 13, Hsiung further teaches the operation knob is an operation button (column 2, lines 14-15).

Claims 3-5, 7, 9, 10, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsiung and Levine as applied to claims 1, 6, 8, 11, and 13 above, and further in view of Weber et al. (6,092,902).

With respect to claims 3, 7, 9, 12, and 14, Hsiung and Levine teach all of the claimed elements, as discussed above, as well as Bauer teaches a light emission source (8) provided inside a bearing section (6) of the operation knob (3). Hsiung and Bauer do not explicitly teach a shaft section of the operation part is a transparent material. Weber teaches a shaft section (D1) of an operation part (2) is a transparent material (column 3, lines 23-35). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use the transparent material of Weber in the shaft of Hsiung, in order to have the shaft act as a light guide (column 3, lines 23-25).

As for claims 4 and 5, Hsiung and Levine teach all of the claimed elements, as discussed above, except for explicitly teach at least one of an internal wall surface of the operation knob and a panel surface at the rear surface of the light guiding pieces is a reflection surface and a part of the light guiding piece is a reflection surface. Weber, also drawn to illuminated knobs, teaches at least one of an internal wall surface (17) of the operation knob (1) is reflective (column 3, lines 47-53) and a part of a light guiding piece is a reflection surface (Abstract). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use the reflective wall surface and

Art Unit: 2875

reflective coating of Weber on the rear surface of the light guiding piece of Hsiung, in order to protect the light guiding piece (Abstract).

As for claim 10, Hsuing further teaches a concave (111) formed in a panel (11) surface (Fig. 1) to which the operation part (24) is attached (Fig. 2), and the light guiding piece (23) is place in the concave (Fig. 2).

Allowable Subject Matter

Claims 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach or suggest a light guiding piece with an inner peripheral section that is thicker than an outer peripheral section, where the inner peripheral section is located inside an operation knob and the outer peripheral section is disposed around an outer periphery of the operation knob and has an outer periphery protruding outward from the outer periphery of the operation knob, with a first reflection surface formed on a rear surface of the outer peripheral section of the light guiding piece and a second reflection surface is formed on the rear surface of the outer peripheral section of the light guiding piece.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Carter whose telephone number is (571)272-0959. The examiner can normally be reached on Monday through Friday.

Art Unit: 2875

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea can be reached on (571)272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

wjc
07/31/07


ALI ALAVI
PRIMARY EXAMINER